(No Model.)

E. HAYS.

HORSE DETACHER.

No. 456,816. Patented July 28, 1891.

FIG. I.

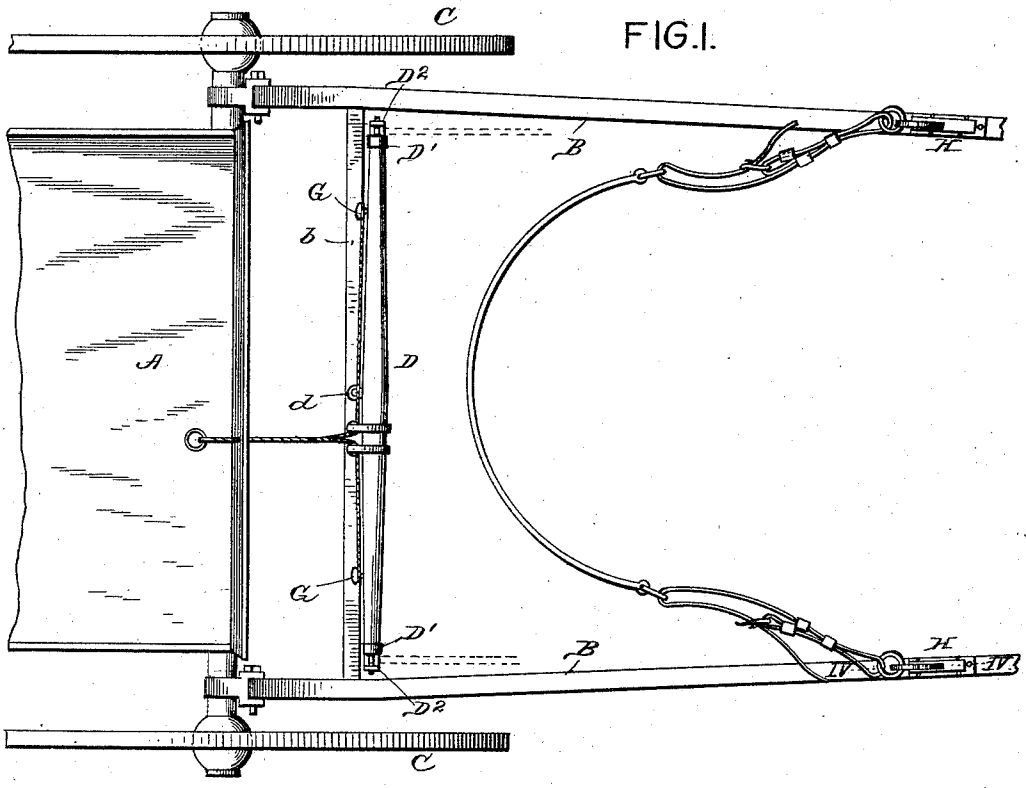


FIG. II.

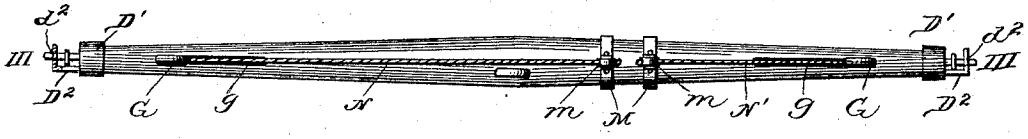


FIG. III.

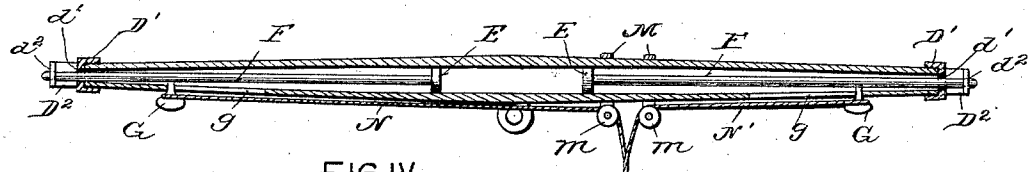
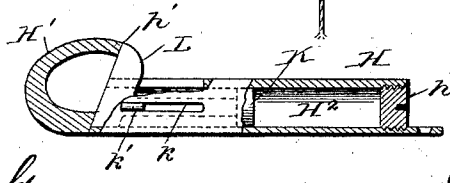


FIG. IV.



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UNITED STATES PATENT OFFICE.

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HORSE-DETACHER.

SPECIFICATION forming part of Letters Patent No. 456,816, dated July 28, 1891.

Application filed January 17, 1891. Serial No. 378,147. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH HAYS, a citizen of the United States, residing at Warsaw, in the county of Kosciusko and State of Indiana, have invented certain new and useful Improvements in Horse-Detaching Devices; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, which form a part thereof, is a full, clear, and exact description of my improvements, such as will enable those skilled in the art to which they appertain to make and use the same.

My invention has relation to that class of devices by means of which horses may be detached from vehicles by the occupants thereof in case of a runaway or other accident; and the object of my invention is to provide a simpler, more economical, and at the same time more effective device than has heretofore been constructed for this purpose.

To this end my invention consists, principally, of constructing whiffletrees and holdbacks with compressed-air cylinders, in which suitable pistons operate to control the whiffletree and holdback-hooks.

My invention consists of other features of novelty, which will be hereinafter fully set forth with reference to the accompanying drawings.

In said drawings, Figure I is a plan view of a portion of a vehicle with my improvements applied thereto. Fig. II is a rear elevation of the singletree. Fig. III is a longitudinal section of the same, taken on the line III III of Fig. II. Fig. IV is a longitudinal section of the holdback, taken on the line IV IV of Fig. I.

Like letters of reference indicate the same parts throughout the several views.

A represents the body, B the shafts, and C the wheels, of the front portion of a vehicle.

D is the whiffletree, centrally pivoted at d to the cross-piece b of the shafts in the customary manner. The whiffletree is constructed of a metallic cylindrical piece having a smooth central bore, screw-caps D′, fitted to the ends and having perforations d', and keepers D^2, attached to the caps and provided with perforations d^2.

E are pistons tightly fitting the bore of the whiffletree D on both sides of its center and adapted to move inwardly and outwardly a short distance.

F are rods attached to the pistons E and projecting through the perforations d' in the screw-caps D′ and the perforations d^2 in the keepers D^2.

In the center of the tubular whiffletree between the two pistons E is confined a body of compressed air which tends to thrust both pistons with their rods outwardly and consequently keeps the ends of the rods normally projecting from the ends of the whiffletree and engaging the perforated keepers. The ends of the tugs are confined on the projecting rods between the ends of the whiffletree and the keepers. Near the outer ends of the whiffletree are slots g.

G are lugs or thumb-pieces screwed into or otherwise attached to the rods F and operating in the slots g for the double purpose of limiting the inward and outward movements of the rods and operating them against the action of the confined cushion of compressed air. The inward movement of these thumb-pieces will retract the projecting ends of the rods F and release the tugs, and when released the compressed air will force them to their normal positions.

For an automatically-releasing holdback I construct a device as follows: H is a casting formed with a base-plate suitably perforated at its ends for the reception of screws, a holdback-hook H′, and a cylindrical portion H^2. The hook H′ has a beveled edge h' for the purpose presently to be explained. The cylindrical portion H^2 has a smooth central bore extending from end to end and provided with a screw-plug h^2 at the end farthest from the hook H′. K is a piston snugly fitting the bore of the cylindrical portion H^2 and having attached thereto by a rod or other means an inclined retaining-finger L, which is adapted to normally rest against the beveled edge h' of the holdback-hook. The hollow cylindrical portion between the screw-plug and the piston K is filled with compressed air, which acts on said piston to keep the parts in proper position. k is a slot cut in the forward end of the cylinder, through which operates a

thumb-piece k' to actuate the finger-piece and piston against the action of the compressed air. One of these holdbacks is secured to each shaft. Under ordinary circumstances the rings of the holdback-straps are retained on the hooks H′ by the inclined fingers L; but when the traces are released and the horse starts forward the rings will impinge against the inclined bearing-faces of the fingers L, which will force said fingers away from the holdback-hooks against the action of the compressed air and thereby release said rings from the holdbacks.

The above construction of whiffletree and holdbacks is sufficient for ordinary use.

When it is desired to employ the improvements as a safety device for detaching a horse by the occupant of the vehicle, it is only necessary to provide suitable means whereby the devices already described can be operated from the vehicle. I prefer the following arrangement: To one side of the center of the whiffletree D are secured side by side two metal bands or straps M, provided with anti-friction rollers m. N and N′ are cords or cables, one of which is attached to each of the lugs G, and then passed under the anti-friction rollers m and back to the vehicle, where it can be attached to any suitable operating device.

It is obvious that the principles of my invention could be readily applied to a double-tree by merely adding an additional pulley between the two singletrees.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of the tubular whiffletree, pistons in said whiffletree, rods carried by said pistons, and a confined body of air between said pistons, for the purpose set forth.

2. The combination of the tubular whiffletree with a smooth longitudinal bore therethrough, pistons adapted to fit snugly in said whiffletree, rods carried by said pistons and adapted to engage the ends of the tugs, and a confined body of air between the pistons for keeping the rods thrust outward, for the purpose set forth.

3. The combination of the tubular whiffletree, pistons in said whiffletree, rods carried by said pistons, a confined body of air between said pistons for thrusting the rods outward, and means for drawing the rods inward, for the purpose set forth.

4. The combination of a tubular whiffletree, pistons in said whiffletree, rods for engaging the tugs and actuated by the pistons, a confined body of air between the pistons, slots g in the whiffletree, and lugs G, attached to the rods, for the purpose set forth.

5. The combination of a tubular whiffletree provided with piston-rods and a confined body of air for the purpose set forth, with the thills and an automatically-operating holdback, substantially as herein set forth.

6. The combination of a tubular whiffletree provided with rods and pistons, and a confined body of air for operating the rods with the thills, a holdback provided with a hook, a tubular portion, a piston carrying the retaining-finger, and a confined body of air for operating the finger, substantially as herein set forth.

7. In a holdback, the combination of the hook and cylindrical portion, a piston working in said cylindrical portion, a retaining-finger attached to said piston, and a confined body of air, for the purpose set forth.

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Witnesses:
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